Wouter van der Wijngaart
KTH Micro and Nanosystems
www.kth.se/profile/wouter; wouter@kth.se
IMPACT = Value provided to stakeholders and end-users
The arrow we tend to forget

= The focus of KTH IMPACT work
Why you should care: IMPACT fosters re-investments
Make sure to close the IMPACT LOOP
KTH - VETENSKAP OCH KONST

**INPUT**
- Students
- Faculty
- Ideas
- Collaborators
- Funding
- Labs

**OUTPUT**
- Ideas
- Publications
- Methods
- Patents
- Degrees
- Skilled collaborators
- Prototypes
- Paper in journal with AVERAGE impact factor

**IMPACT**
- Economic value
- New products
- Sustainability
- Health
- Life quality
INPUT

Students  Faculty  Ideas  Collaborators  Funding  Labs

OUTPUT

Ideas  Publications  Methods  ...  Patents  Prototypes  Skilled collaborators

DEGREES

IMPACT

Economic value  New products  Sustainability  ...  Health  Life quality

Paper in journal with HIGH impact factor
**Stakeholder** = person or organization with an interest in a project

**End-user** = person or organization who uses the outcome of a project
Technology Readiness Level (TRL)

https://en.wikipedia.org/wiki/Technology_readiness_level
RAE 2020 reflections on enabling IMPACT at EECS

“We think we do rather well.”
KTH has unclear expectation levels on its divisions/departments or individual researchers. We should reach a common understanding, definition and quantification methods for impact.

“We likely do not reach our full potential.”
Low hanging fruits:
• Improve communication.
• Engage with stakeholders – and get their feedback.
Focus of this workshop:
1) Understand transfer of YOUR output
2) Communication as enabler
Focus of this workshop:

1) Understand transfer of YOUR output
2) Communication as enabler
Write down a NABC analysis
(Typ. 0.5-2 page)

• **N for Need.** N is the most important! An idea without a practical need remains just what it is: a good idea and nothing more.

• **A for Approach.** Describe your approach. A is usually a point of departure for most activities.

• **B for Benefit.** What makes what you do unique? How will your approach build value?

• **C for Competition.** What alternatives exist to reach B? (And how are you better?) C focuses on the reality within which a concept has to function.

Engage with KTH Innovation
(e.g. Gustav Notander <notander@kth.se>)
Write down a NABC analysis
(Typ. 0.5-2 page)

• N for Need. N is the most important! An idea without a practical need remains just what it is: a good idea and nothing more.

• A for Approach. Describe your approach. A is usually a point for most activities.

• B for Benefit. What makes what you do unique? How will your approach build value?

• C for Competition. What alternatives exist to reach B? (And how are you better?) C focuses on the reality within which a concept has to function.

Resembles a proto-business plan.

Who are your stakeholders? (Note: end user ≠ stakeholder)

Be specific!

Reuse your NABC text on your project website!

NABC = great basis for the Introduction Chapter of a thesis.

Engage with KTH Innovation
(e.g. Gustav Notander <notander@kth.se>)
Organize a workshop with your stakeholders

- Identify key stakeholders and THEIR impact areas
- List the specific goals of the workshop
- Identify the best activities to reach the goals
- Execute the workshop

Engage with your local Innovation Office (e.g. KTH Innovation: Gustav Notander notander@kth.se) and/or your local events planner (e.g., evenemang@kth.se)
Focus of this workshop:
1) Understand transfer of YOUR output
2) Communication as enabler
This presentation:
Five easy & tangible processes

Communication as enabler:
1. Publish a news release
2. Publish a video / make an elevator pitch
3. Update your project / profile website
Communication

you

Your message

Your target audience

Communication channel
Communication: target audience

you

Your message

Communication channel

Your target audience
IMPACT on your target audience

• Bring your results to value ➔ your stakeholders
• Inform society about ongoing research
• Increase citations ➔ your scientific peers
• Attract the best potential students
• Attract potential collaborators
• Increase your funding ➔ politicians, funding organisations, scientific reviewers
Communication planning step 1

you

Your message

Communication channel

Your target audience
<table>
<thead>
<tr>
<th>Target audience</th>
<th>Communication channel</th>
<th>LnkdIn</th>
<th>FaceBk</th>
<th>Twittr</th>
<th>Your website</th>
<th>Newspaper</th>
<th>Workshop</th>
<th>Other</th>
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<tbody>
<tr>
<td>Peers</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>Specialised magazines</td>
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<tr>
<td>Prospective students</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Internships, visits, ...</td>
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<tr>
<td>Potential Collaborators</td>
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<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>Email phone</td>
</tr>
<tr>
<td>Funding bodies/politics</td>
<td></td>
<td>?</td>
<td>?</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sweden AB</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Have you considered: NATURE/SCIENCE/other journals’ “Correspondence”, “Review” or “Perspectives” articles? (e.g., https://www.nature.com/nature/for-authors/other-subscriptions)
<table>
<thead>
<tr>
<th>Target audience</th>
<th>Communication channel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LnkdIn</td>
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<tr>
<td><strong>Peers</strong></td>
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Have you considered NATURE/SCIENCE/etc “Correspondence”, “Review” or “Perspectives” articles? (e.g., https://www.nature.com/nature/for-authors/other-subscribers)
Communication planning step 1

you

Communication channel

Your message

Your target audience
What do...

• A news release (website or social media)
• A good scientific journal abstract
• An elevator talk
• A short video

have in common?

The format of an impactful message
The format of an IMPACTFUL message

(0. Catchy sentence)
1. General picture / Introduction to an area
2. Specific challenges / needs in the field
3. Your solution
4. Major results
5. How this can change the world = potential impact

Why should I care?
“SO WHAT?”
Non-technical language

Technical language
The format of an IMPACTFUL message

(0. Catchy sentence)
1. General picture / Introduction to an area
2. Specific challenges / needs in the field
3. Your solution
4. Major results
5. How this can change the world = potential impact

Tip:
Skip 1 & 2 in case of elevator pitch or poster pitch (when superlow attention span of your audience)
How NOT to write for a general public...

1. General picture / Introduction to an area
2. Specific challenges / needs in the field
3. Your solution
4. Major results
5. How this can change the world = potential impact

Technical language
Write a news feed and publish it

• **WHEN:** every time you publish a paper!
  (Why would you publish if not your stakeholders should know about it?)

• **HOW:**
  – Describe what / why / when / who / how:
    [intra.kth.se/en/administration/kommunikation/tipsa-om-nyheter/ringa-in-nyheten-1.471291](intra.kth.se/en/administration/kommunikation/tipsa-om-nyheter/ringa-in-nyheten-1.471291)
  – Look at examples of others.
  – Add images !!! If needed use free & generic images – e.g. Creative Commons ([creativecommons.org](creativecommons.org))
  – Engage with your school communicator: Maria Malmqvist, marma@kth.se; Anna Gullers, agullers@kth.se
    (they may (not) put it on the school FB channel...)
  – **Post on a channel focused on your target audience!**
  – Post on your own website / Division news / Social media channels
Keywords or hashtags

• Use them on:
  – Scientific articles
  – Your profile page
  – Project websites
  – LinkedIn / FB / Twitter posts

• Keywords determine whom will find your work via social media/search engines

• **Increase impact by chosing keywords that attract your stakeholders** !
Write a news feed and publish it

Do not forget!

– Hashtags!
– A weblink to your publication
– Recognize your co-authors appropriately
– Make sure your co-authors also publish the news on their channels.
Our latest article in the journal "Medical Devices & Sensors": "A loop-shaped minimally invasive brush for improved cytology sampling of pancreatic cysts during EUS-FNA". [https://lnkd.in/eRJqddD](https://lnkd.in/eRJqddD)

We developed a brush to extract cells from the inner wall of pancreatic cysts. Pancreatic cysts are - if malignant - precursors of pancreatic cancer. Our brushes are designed to be inserted into the cyst during minimally invasive upper GI endoscopy through a fine needle (22G = 413 μm inner diameter) after which they expand and brush the inner surface of the cyst. Aspirating the cells via the needle will allow subsequent analysis and determining malignancy. We hope this will enable the early diagnosis of pancreatic cancer and thereby increase patient survival rates.

(With Filipe Marques and others.)

#KTH #karolinska #cancer #medicine #healthcare #research #medicaldevices #medical #MEMS #pancreaticcancer #oncology #science #endoscopy
Your post posted on January 18, 2021
57 reactions

2,908 views  2 reshares

105 people from KTH Royal Institute of Technology viewed your post

University of Twente  34
Chalmers University of Technology  17
Lund University  15
Karolinska Institutet  15
KU Leuven  14
McGill University  13
Novo Nordisk  13
UMCG  11

178 people who have the title Research Fellow viewed your post

Laboratory Scientist  146
University Professor  146
Student  135
Engineer  74
Software Developer  44
Salesperson  40
Founder  40
Business Strategist  39

196 people viewed your post from Stockholm, Sweden

Stockholm County, Sweden  87
Enschede Area, Netherlands  56
Gothenburg, Sweden  43
Antwerp Area, Belgium  37
Istanbul, Turkey  34
Copenhagen Area, Capital Region, Denmark  32
Greater Boston Area  29
Barcelona Area, Spain  28
Spread the word: we look for a doctoral student with a genuine interest in MEMS/materials chemistry, a strong driving force, and a problem-solving approach for a new project on smart matter. This doctoral project aims to synthesize, functionalize and tailor-make new stimuli-responsive polymer gels. These serve as material digits in a hybrid matrix with thermal and magnetic actuators translating the system to reversible sol-gel transitions. Research includes collaboration with researchers in micro- and nanosystems, electronics, and robotics. Materials are developed with sustainability as a guiding principle and renewability/recyclability in focus. For research collaboration with Ulrica Edlund and Wouter van der Wijngaart.

#kth #recruitment #phdstudent #materials #MEMS #robotics #polymer #recycling #sustainability #technology #engineering #programmablemattter
Doctoral student in responsive polymer gels for recyclable materials

94 people from KTH Royal Institute of Technology viewed your post

<table>
<thead>
<tr>
<th>Institution</th>
<th>Views</th>
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<tbody>
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<td>Karolinska Institutet</td>
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<tr>
<td>Chalmers University of Technology</td>
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<tr>
<td>University of Twente</td>
<td>7</td>
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<tr>
<td>Colorado State University</td>
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<tr>
<td>KTH</td>
<td>Kungliga Tekniska högskolan</td>
</tr>
<tr>
<td>EPFL (École polytechnique fédérale de Lausanne)</td>
<td>4</td>
</tr>
<tr>
<td>Statnett SF</td>
<td>4</td>
</tr>
<tr>
<td>SciLifeLab</td>
<td>4</td>
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</table>

96 people who have the title Research Fellow viewed your post

<table>
<thead>
<tr>
<th>Role</th>
<th>Views</th>
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</thead>
<tbody>
<tr>
<td>Student</td>
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</tr>
<tr>
<td>University Professor</td>
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</tr>
<tr>
<td>Laboratory Scientist</td>
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<tr>
<td>Engineer</td>
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</tr>
<tr>
<td>Consultant</td>
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<tr>
<td>Executive Director</td>
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<tr>
<td>Salesperson</td>
<td>16</td>
</tr>
<tr>
<td>Founder</td>
<td>12</td>
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</tbody>
</table>

144 people viewed your post from Stockholm, Sweden

<table>
<thead>
<tr>
<th>Location</th>
<th>Views</th>
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</thead>
<tbody>
<tr>
<td>Stockholm County, Sweden</td>
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<tr>
<td>Gothenburg, Sweden</td>
<td>22</td>
</tr>
<tr>
<td>Enschede Area, Netherlands</td>
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<tr>
<td>Helsinki Area, Finland</td>
<td>14</td>
</tr>
<tr>
<td>Greater Boston Area</td>
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</tr>
<tr>
<td>Uppsala, Sweden</td>
<td>11</td>
</tr>
<tr>
<td>Antwerp Area, Belgium</td>
<td>11</td>
</tr>
<tr>
<td>Fort Collins, Colorado Area</td>
<td>9</td>
</tr>
</tbody>
</table>
Make a short movie

• Concatenate 6-10 ppt slides
• Use free & generic images – e.g. Creative Commons (creativecommons.org)
• Movie software: e.g. iMovie (Mac)
• Our attention span is ~45 s
• Publish:
  – Engage with your school communicator: Maria Malmqvist, marma@kth.se; Anna Gullers, agullers@kth.se
  – (they may (not) put it on the school FB channel...)
  – Post on a channel focused on your target audience.
  – Post on your own website / Division news / Social media channels. Youtube !!!
  – Make sure your co-authors publish it on their own social media
Example of movie made in 6 hours by my PhD student

youtube.com/watch?v=78VuJxcvqpM&t=7s
Examples of movie made by KTH communicators

youtube.com/watch?v=QQSWB9FGOIA
Update Wikipedia

• **WHAT:**
  – Put references to your scientific publications on 2-3 relevant Wikipedia pages.
  – Neutral information – no marketing
  – Preferably: Add a new sentence on an existing page
  – If needed: Create a new section on an existing page
  – If needed: Create a whole new page
  – *(HINT: Ask every of your PhD students to do this for each of their publications).*
“Is it okay to put your own work on Wikipedia?”


Using material you have written or published is allowed within reason, but only if it is relevant, conforms to the content policies, and is not excessive.

*Citations should be in the third person and should not place undue emphasis on your work.*

*Adding numerous references to work published by yourself and none by other researchers is considered to be a form of spamming.*
Personal TODO list after publishing a journal article:

1. Write a news release (I sometimes try to engage a KTH communicator to do this for me)

2. Ask to post news release on KTH central (contact Peter Ardell – p3t3r@kth.se) or KTH school channels (EECS → contact Maria - marma@kth.se)

3. Link to news release on LinkedIn and Facebook, specifically on Channels aimed at my target audience.

4. Email a link to DN, SvD, NyTeknik, Kemivärlden, other specialised magazines.

5. Update Wikipedia on 2-3 places with a reference to the publication
Follow-up the efficiency of your communication

Check your publication’s **ALTMETRIC** score:


(Create a bookmark in your browser + click that bookmark when on an article page.)

**LinkedIn** allows tracking the outreach of your posts.
ALTMETRIC Score

Total citations
- Article Accesses: 574
- Web of Science: 0
- CrossRef: 2

Online attention
- Almetric score (what's this?)
  - Tweeted by 2
  - Blogged by 2
  - On 1 Facebook pages
  - Mentioned in 2 Google+ posts
  - Picked up by 7 news outlets
  - 2 Wikipedia
  - 19 readers on Mendeley

This Almetric score means that the article is:
- in the 96th percentile (ranked 12,083rd) of the 347,833 tracked articles of a similar age in all journals
- in the 91st percentile (ranked 1st) of the 12 tracked articles of a similar age in Microsystems & Nanoengineering

Mentions in news, blogs & Google+
- News articles (7)
- Scientific blogs (2)
- Google+ posts (2)

More-sensitive DNA nanowires promise better measurements of biological processes
Breitbart News Network

Guld och DNA ska upptäcka sjukdomar
My News Desk

Twitter demographics

E.g.: https://www.nature.com/articles/micronano201784/metrics
How well does your department do in communication?

https://abm.sys.kth.se/app/abm

Look for the ALTMETRIC link at the bottom!
Your own profile page
https://intra.kth.se/en/eecs/vs-stod/kommunikation/din-profilsida-1.896803

- Have a profile picture
- **Add hashtags at the bottom of your page - this will increase your hit-rate in search engines such as Google.**
- Write an overall text focusing on your research or work area. Don't forget to mention the significance / potential impact of your work.
- Present yourself towards the end of the text, and include data such as when and where you got your master degree, PhD degree and postdoc.
- Add subpages, known as portfolio pages, for deeper information about a specific topic, for example a research project
- Activate your research ID's to make them appear at the top of the page
- Activate the link to your publications
- Activate the link to your courses
Your KTH profile page

• Pages without hashtags are not found
• Pages without images are not looked at
• ...

intra.kth.se/en/eecs/vs-stod/kommunikation/din-profilsida-1.896803
Gather all your Division/Department news outputs

• Example: [www.kth.se/mst/news](http://www.kth.se/mst/news)

• If your Department’s last news update was 2018, you can update this retroactively.

• Think of reporting your dissemination to the RAE!
Division workshop idea: 30 min workgroups

- Work on a NABC analysis or prepare an industrial workshop
  Room A
  Room B

- Improve your profile page or a KTH web page
  Room C
  Room D

- Make a news release or a video for social media
  Room E
  Room F

- Update WIKIPEDIA
  Room G
  Room H

We gather for a short wrap up session on the original meeting link.
Time for questions, and maybe someone wants to share their result from the workshop?